

Amendments to the claims:

Cancel claims 2, 3, 6, 9-11, 15, 16, 19, 20 and 22-28.

1 1. (Currently Amended) A magnetic read head comprising:
2 a current perpendicular to the planes (CPP) sensor;
3 the CPP sensor having a top cap layer structure; and
4 the cap layer structure being composed of a first layer of tantalum (Ta) and a second layer
5 of ruthenium (Ru), or rhodium (Rh).

2.- 3. (Canceled)

1 4. (Original) A magnetic read head as claimed in claim 1 wherein the CPP sensor
2 further comprises:
3 a ferromagnetic pinned layer structure;
4 a ferromagnetic free layer structure;
5 a nonmagnetic spacer layer located between the pinned layer structure and the free layer
6 structure.

1 5. (Original) A magnetic read head as claimed in claim 4 further comprising:
2 ferromagnetic first and second shield layers;
3 the CPP sensor being located between the first and second shield layers; and
4 the first and second shield layers serving as first and second leads for conducting a current
5 through the CPP sensor in a direction perpendicular to major thin film planes of the CPP sensor.

6. (Canceled)

1 7. (Currently Amended) A magnetic read head as claimed in claim [[6]] 5 wherein
2 the free layer structure is located between the spacer layer and the cap layer structure.

1 8. (Currently Amended) A magnetic read head as claimed in claim [[6]] 5 wherein
2 the pinned layer structure is located between the spacer layer and the cap layer structure.

9.- 11. (Canceled)

12. (Currently Amended) A magnetic head assembly comprising:

a write head;

a read head adjacent the write head;

the read head comprising:

a current perpendicular to the planes (CPP) sensor;

the CPP sensor having a top cap layer structure; and

the cap layer structure being composed of a first layer of tantalum (Ta) and a second layer of ruthenium (Ru), or rhodium (Rh).

13. (Original) A magnetic head assembly as claimed in claim 12 wherein the CPP sensor further comprises:

a ferromagnetic pinned layer structure;

a ferromagnetic free layer structure;

a nonmagnetic spacer layer located between the pinned layer structure and the free layer structure.

14. (Original) A magnetic head assembly as claimed in claim 13 further comprising:

ferromagnetic first and second shield layers;

the CPP sensor being located between the first and second shield layers; and

the first and second shield layers serving as first and second leads for conducting a current through the CPP sensor in a direction perpendicular to major thin film planes of the CPP sensor.

15.- 16. (Canceled)

1 17. (Currently Amended) A magnetic disk drive comprising:
2 at least one magnetic head assembly that has a head surface;
3 the magnetic head assembly having a write head and a read head;
4 the read head including:
5 a current perpendicular to the planes (CPP) sensor;
6 the CPP sensor having a top cap layer structure; and
7 the cap layer structure being composed of a first layer of tantalum (Ta) and a second
8 layer of ruthenium (Ru); or rhodium (Rh);
9 ferromagnetic first and second shield layers; and
10 the CPP sensor being located between the first and second shield layers;
11 a housing;
12 a magnetic medium supported in the housing;
13 a support mounted in the housing for supporting the magnetic head assembly with said head
14 surface facing the magnetic medium so that the magnetic head assembly is in a transducing
15 relationship with the magnetic medium;
16 a motor for moving the magnetic medium; and
17 a processor connected to the magnetic head assembly and to the motor for exchanging signals
18 with the magnetic head assembly and for controlling movement of the magnetic medium.

1 18. (Original) A magnetic disk drive as claimed in claim 17 wherein the CPP sensor
2 further comprises:
3 a ferromagnetic pinned layer structure;
4 a ferromagnetic free layer structure;
5 a nonmagnetic spacer layer located between the pinned layer structure and the free layer
6 structure.

19.- 20. (Canceled)

1 21. (Currently Amended) A magnetic read head comprising:
2 a current perpendicular to the planes (CPP) sensor;
3 the CPP sensor having a top cap layer structure which includes:
4 a first layer of tantalum (Ta) only;
5 a second layer of ~~ruthenium (Ru)~~; rhodium (Rh); ~~or gold (Au)~~; and
6 the first layer interfacing the second layer and being located between ~~and interfacing~~
7 a spacer layer and the second layer.

22.- 28. (Canceled)

Add new claims 29-32.

1 29. (New) A magnetic read head as claimed in claim 21 wherein the CPP sensor
2 further comprises:
3 a ferromagnetic pinned layer structure;
4 a ferromagnetic free layer structure; and
5 the spacer layer being located between the pinned layer structure and the free layer structure.

1 30. (New) A magnetic read head as claimed in claim 29 further comprising:
2 ferromagnetic first and second shield layers;
3 the CPP sensor being located between the first and second shield layers; and
4 the first and second shield layers serving as first and second leads for conducting a current
5 through the CPP sensor in a direction perpendicular to major thin film planes of the CPP sensor.

1 31. (New) A magnetic read head as claimed in claim 29 wherein the first layer also
2 interfaces the free layer structure.

1 32. (New) A magnetic read head as claimed in claim 29 wherein the first layer also
2 interfaces the pinned layer structure.